DOCUMENT RESUME

ED 295 770 RC 016 618

AUTHOR Edington, Everett D.; Di Benedetto, Romeo Raymond
TITLE Principal Leadership Style and Student Achievement in Small and Rural Schools of New Mexico.
PUB DATE Apr 88
NOTE 31p.; Paper presented at the Annual Meeting of the American Educational Research Association (New Orleans, LA, April 5-9, 1988). Best copy available.
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Academic Achievement; American Indians; Educational Research; Grade 8; Hispanic Americans; Junior High Schools; *Leadership; *Principals; *Rural Schools; *Small Schools; Socioeconomic Status
IDENTIFIERS Comprehensive Tests of Basic Skills; New Mexico

ABSTRACT

Effective leadership appears to be an element of a successful school, but few studies have covered either leadership in small and rural schools or effective schools with the ethnic mix of Anglo, Hispanic, and Native American students. This study's population consisted of the 24 New Mexico rural public elementary schools having an enrollment of 500 or fewer students and a principal who had been at the school for more than one year. Hispanics and Native Americans comprised, on average, 37.1% and 2.3%, respectively, of student enrollments. The principals and eighth grade teachers of each school rated the principals on participation, role clarification, supervision, and charismatic leadership. A multiple stepwise regression analysis tested the effect of principal leadership qualities, student socioeconomic status, and student ethnicity on eighth grade student scores on the Comprehensive Test of Basic Skills (CTBS). Student socioeconomic status was related to CTBS scores, but ethnicity was not. The teachers' perception of the principal's role clarification was negatively related to CTBS scores, and their perception of his charismatic leadership was positively related. No other teacher ratings or principal self-ratings were significant variables. The paper includes five statistical tables and 18 references. (SV)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

rec 13-04-88

ED295770

BEST COPY AVAILABLE

PRINCIPAL LEADERSHIP STYLE AND STUDENT ACHIEVEMENT

IN SMALL AND RURAL SCHOOLS OF NEW MEXICO

BY

EVERETT D. EDINGTON, PROFESSOR
EDUCATIONAL MANAGEMENT AND DEVELOPMENT
NEW MEXICO STATE UNIVERSITY

ROMEO RAYMOND DI BENEDETTO, SOCIOLOGY DEPARTMENT
EL PASO COMMUNITY COLLEGE, EL PASO, TEXAS

AMERICAN EDUCATIONAL RESEARCH ASSOCIATION
NEW ORLEANS
APRIL 1988

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

EVERETT D. EDINGTON

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

RC 016618

BEST COPY AVAILABLE

INTRODUCTION

Statement of the Problem

The problem addressed in this decision-oriented study is that of determining the impact of principal leadership style on the effectiveness of small schools. Many schools are attempting to improve their effectiveness as measured by student achievement, and leadership is being studied as a possible important element. Although research findings identify leadership as a factor in student achievement (Andrews & Soder, 1987; Edmonds, 1982b; Kimball & others, 1985; Lightfoot, 1983; Purkey & Smith, 1982), very few studies have been done on leadership in small and rural schools.

Effective leadership appears to be an element of a successful school and there is now some agreement on the variables involved (Andrews & Soder, 1987; "Culture of an Effective School", 1984; Edmonds, 1982b; Kimball & others, 1985; Larsen, 1987; Lightfoot, 1983; Purkey & Smith, 1982; Stanard, 1986). There has been little research conducted on effective schools in areas with the ethnic mix of Anglo, Hispanic, and Native American students such as are found in rural New Mexico. Recently, research has been conducted (Martellaro, 1984; Vaughn, 1984) which indicates the importance of socioeconomic status and ethnicity, and the relative nonimportance of school size to student learning.

Objectives

It is the general objective of this study to determine the relationship between the leadership style of the principal and the effectiveness of New Mexico's very small and rural schools at the eighth grade level.

The objective is to determine whether a significant relationship exists between principal leadership style and the effectiveness of rural schools as measured by eighth grade student scores on the Comprehensive Test of Basic Skills (CTBS). This study has controlled for student socioeconomic status and ethnicity with the data reported in an aggregate mode as a percent of the student body that is within the various subcategories. The leadership style was measured on four levels by the self-ratings of the principals and five levels of the perceptions of the teachers.

Research Categories and Hypotheses

Category One: Null Hypothesis on the Teacher's Perceptions of Leadership Scales.

Hypothesis 1. There is no relationship between principal leadership style, as perceived by the teachers on the decision participation scale, and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status.

Hypothesis 2. There is no relationship between principal leadership style, as perceived by the teachers on the role clarification scale, and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status.

Hypothesis 3. There is no relationship between principal leadership style, as perceived by the teachers on the supervision scale, and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status.

Hypothesis 4. There is no relationship between principal leadership style, as perceived by the teachers on the peer cooperation scale, and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status.

Hypothesis 5. There is no relationship between principal leadership style, as perceived by the teachers on the transformation scale, and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status.

Category Two: Null Hypotheses on the Principal's Self-Ratings on Leadership Scales.

Hypothesis 6. There is no relationship between principal leadership style, as self-rated by the principals on the decision participation scale, and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status.

Hypothesis 7. There is no relationship between principal

leadership style, as self-rated by the principals on the role clarification scale, and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status.

Hypothesis 8. There is no relationship between principal leadership style, as self-rated by the principals on the supervision scale, and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status.

Hypothesis 9. There is no relationship between principal leadership style, as self-rated on the transformation scale, and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status.

Limitations

This study of the eighth grades of the small and rural public schools of New Mexico is not considered to be a representative sample for the small and rural schools of the United States as a whole, nor of any other state in particular, nor of the large urban schools of New Mexico. The findings have been applied only to the small and rural public schools of New Mexico.

Definition of Terms

Leadership Styles: this study adopts the meaning provided by Hersey and Blanchard as the consistent behavior patterns that they (leaders) use when they are

> working with and through other people as perceived by those people. These patterns emerge in people as they begin to respond in the same fashion under similar conditions; they develop habits of action that become somewhat predictable to those who work with them (1982, p.126).

a. Decision Participation Style: has the meaning as defined by Yukl and Nereroff (1979, p. 171); "the extent to which a leader consults with subordinates and otherwise allows them to participate in making decisions, and the amount of influence over the leader's decisions that results from this participation." For this study, this style has been measured by the Participation Scale.

b. Peer Cooperation Style: refers to the extent to which faculty are available to and actually assist each other in the achievement of their professional responsibilities. For this study, this style has been measured by the Peer Cooperation Scale.

c. Role Clarification Style: refers to the extent to which the principal clarifies to the faculty his or her understanding of their professional responsibilities so that all involved can have the same understanding regarding those responsibilities. For this study, this style has been measured by the Role Clarification Scale.

d. Supervision Style: refers to the manner and extent to which the principal renders assistance to the teachers in the manner of a colleague. For this study , this style has been measured by the Supervision Scale.

e. Transformation (Charismatic) Style: refers to

the principal who inspires a transformation within the faculty to increase their perception of the school's potential and of their own personal ability to contribute more significantly to that potential. For this study, this style has been measured by the Transformation Scale.

PROCEDURES

This study consists of a statistical stepwise multiple regression correlational analysis using existing student data in conjunction with structured and validated interview instruments for use by both principals and teachers.

The population of this study consists of all the potential and the 36 actual small rural public schools with an enrollment of 500 or fewer students in New Mexico. The sample consists of the 24 small rural schools in New Mexico in which the eighth graders were administered the CTBS during the Spring of 1987.

In the 12 schools not included, the principal had been there less than one year and his influence would not have had an effect on the criterion measured.

The dependent variable is school success as measured by the level of the eighth grade students' academic achievement, which for the purpose of this study, has been the criterion measurement of their overall average score on the Comprehensivve Tests of Basic Skills (CTBS).

The validity and reliability of the CTBS is in accordance with the American Psychological Association guidelines (Ahman, 1972). The reliability level for reading ranges from .95 to .97; for language, .92 to .95; for mathematics, .94 to .97 (CTBS Technical Bullentin No. 1, 1974).

The independent variables are the four categories of effective leadership style as self-perceived by the principal and the five categories as perceived by the teachers. The four scales by means

of which the principals indicated their self perceptions are: participation, role clarification, supervision, and transformation. The teachers used the same four scales as did the principals, and in addition, used a fifth scale, peer cooperation, which the principals did not complete.

The leadership instrument is a composite of validated instruments in five categories by the following researchers. The first category, the decision participation scale, is taken from a scale developed by Peter W. Dorfman and Jon P. Howell of New Mexico State University. In a private conversation they have assured this researcher that the reliability level for the decision participation scale which they have developed is close to the .90 level. Their research in this area will soon be published. The second category, the role clarification scale, is also taken from a scale by Howell and Dorfman (1986, 1981) which was originally developed by Schriesheim (1978). The third category, the supervision scale, as well as the fourth category, the peer cooperation scale, were taken from the research of Taylor and Bowers (1972). The internal reliabilities range from .83 to .95. The fifth category, the charismatic or transformation leadership, is taken from Bass (1985). This fifth category is a composite of the following five factors shown with their reliability ratings: Charismatic Leadership, 0.82; Contingent Reward, 0.78; Individualized Consideration, 0.94; Management-by-Exception (Contigent Aversive Reinforcement), 0.60; Intellectual Stimulation, 0.78. In summarizing the tests he conducted on his quantitative model, Bass (1985) writes that it is necessary to study these five

factors to be able to understand transactional and transformational leadership. He also indicates that widely differing profiles of individuals can be obtained by means of this instrument and that similar profiles of a particular leader can be obtained from different respondents.

From the philosophical reflections to the recent empirical studies, there continues to be found a basic two-fold dimension to the study of leadership, namely, the concern for the task and for the human element. This study also includes this dual approach. Two of the leadership styles that have been measured, the decision-participation and the peer cooperation reflect the human element. The role clarification and the supervisory and peer leadership will measure the task element. The fifth leadership style, the transformational, measures both the task and the human elements.

Data Collection

In the fall of 1987 the data was collected by teams from the New Mexico State Department of Education and the New Mexico State University Center for Rural Education. All those involved in data collection received instruction on how to administer the instrument, under the guidance of the Director of the New Mexico State University Center for Rural Education.

The New Mexico State Department of Education collected and made available the mean CTBS scores as well as the breakdown of student ethnicity as indicated by the percent in each school, along with the students' socioeconomic status as indicated by the percent

of students in each school who are eligible for Chapter I funds and the percent eligible for the free lunch program.

The rural and small public schools in New Mexico average approximately a total of five teaching faculty in eighth grade. The teachers in these schools, as a group, were administered a questionnaire by an interviewer. Privately, each principal of each school was administered essentially the same questionnaire as were the teachers. The teachers rated the principals and the principals rated themselves.

Only those teachers who taught in the same school during the previous academic year of 1986-87 as they are currently teaching were eligible to complete the questionnaire. When the situation arose such that there was a school during the 1987-88 academic year whose principal did not serve as principal at that same school during the 1986-87 academic year, then that school was not used.

Data Analysis

A multiple stepwise regression analysis (Marascuilo & Levin, 1983; Pedhazur, 1982; SAS USER'S GUIDE, 1985) was used to test the contribution of the predictors on the dependent variable as described in the null hypothesis of Category Two. Multiple stepwise regression takes all the predictor variables--leadership ratings, SES and ethnicity-- and compares each with student achievement. Stepwise regression indicates the percent of variance accounted for by each predictor variable. The beta value indicates the regression coefficient and R-squared, the multiple correlation

coefficient. The F-Ratio indicates whether the relationship between the predictor variable and the criterion variable are significantly related.

Multiple regression analysis has been used to test the null hypotheses of Categories One, Two, Three, and Four. Stepwise was selected because this technique is very useful. Although there is a basis on previous research findings for selecting a group of variables measuring different leadership styles, as yet there is no empirical basis for an a priori ranking of these variables within the group. Stepwise procedure is designed to identify as much of the R squared as possible with as few independent variables as necessary. The appropriate coefficients of correlation have been compared to determine whether there is a significant difference between principal leadership as measured by the self-ratings of the principals and by the ratings of the teachers.

Descriptive Measures

Data was collected from a sample of 24 very small rural schools in New Mexico. The number of students per school district ranged from a low of 59 to a high of 433 with a mean of 261.7 students per school district. The percent of students per district who dropped out ranged from zero to 17.7 percent with a mean of 4.4. The percent of students per district who were eligible for a free lunch ranged from zero to 77.7 percent with a mean of 51.6. The percent of students per district who were eligible for Chapter I funds ranged from 3.9 to 28.3 percent with a mean of 14.5. The

percent of Hispanic students per school district ranged from 6.3 to 92.9 percent with a mean of 37.1. The percent of Native American students per school district ranged from zero to 43.6 percent with a mean of 2.28. However, there were actually only six districts which reported having any Native American students and these percentages were 0.8, 1.1, 1.6, 3.1, 4.5, and 43.6. The CTBS scores ranged from 32 to 77 with a mean of 57.3. There were 124 eighth grade teachers in the 24 school districts that participated in the study. The number of teachers per district ranged from one to eight with a mean of five. The years of teaching experience ranged from one to 41 with a mean of 12.2. Each school district averaged 5.2 eighth grade teachers per district. There were 22 principals who were eligible and who responded to the structured questionaire. Their number of years as principal ranged from two to 20 with a mean of 7.9. The above data were obtained from the Department of Education in Santa Fe and from the questionnaires completed by the interview participants (Table 1). The survey instrument that was completed by the eighth grade teachers is contained in Appendix A, and that by the principals in Appendix B.

TABLE 1

Number of Observations, Range, and Mean
of School District Characteristics

(n = 24)

Category	Range	Mean
Student Enrollment	59-433	261.7
Percent Free Lunch	0-77	51.6
Dropout Rate	0-17.7	4.4
Percent Hispanic	6.3-92.9	37.1
Percent Native American	0.8-43.6	2.3
CTBS Score	32-77	57.3
Number of Teachers	1-41	5.0
Years of Teaching Experience	1-41	12.2
Years of Teaching in District	1-34	7.9
Percent Chapter I	3.9-28.3	14.5
Number of Years as Principal	2-13	5.0
Years of Administrative Experience per Principal	2-20	7.9

Stepwise Regression Procedure and Application

The stepwise procedure is a systematic approach which is used to develop a model with many independent variables to determine whether or not the independent variabels are useful in explaining the dependent variable. After the independent variables which are significantly related to the dependent variable are indentified, the stepwise procedure then rank orders the predictors in their

order of the amount of variance which they explain. When the dependent and independent variables were entered and identified, the stepwise procedure first analyzed every independent variable, one at a time, with the dependent variable to determine which independent variable would best predict the dependent variable, the CTBS. In stepwise, variables which are once entered do not necessarily remain in the model. The formula (Achen, 1982, p. 34) which directed the stepwise procedure as follows:

$$E(Y) = B_0 + B_1X_1 + B_kX_k$$

The slope or coefficent of the single independent variable is represented by B_1X. The subscript i = 1,2,3,...k until each of the 13 independent variables is measured and then compared with all the others. The Y represents the dependent variable and the Bo, the intercept slope. As each independent variable is measured, the null hypothesis, Ho:$B_1 = 0$, is compared to the alternative hypothesis, $H_1 B_1 = 0$. The independent variable with the highest partial F value is then selected as the best predictor of dependent variable. The independent variable with the highest correlation becomes X_1 as the stepwise procedure then begins to search for the pair of independent variables which best explains the CTBS scores. The correlation is designated as the Beta value, a form of the Pearson productmoment correlation.

After the best pair of independent variables was identified, the stepwise procedure then was directed to continue to identify the best set of three, four, five, six and seven independent variables. The level of significance for a variable to enter into

and to remain within the model was set at 0.15. The level of significance for the model as a whole to be considered significant was set at 0.05. The stepwise procedure continued until variables were identified which did not have a significant F value.

Regresssion models were used on four school district characteristics: the percent of students who were eligible to receive a free lunch, the percent of students who were eligible for Chapter I funds, the percent of students who were Hispanic, and the percent of students who were Native American. Five leadership styles as perceived by the teachers were entered into the formula: decision participation, role clarification, supervision, peer cooperation, and transformation leadership. Four leadership styles as self-rated by the principals were entered into the formula: decision participation, role clarification, supervision, and transformation. The dependent variable was the student CTBS scores.

Stepwise Regression Findings

In step 0, the variables percent free lunch and percent Native American were entered. The R squared, the square of the multiple correllation coefficient, was 0.3180 and was significant at the 0.01 level. Individually, neither the percent free lunch nor the percent Native American was significant as presented in Table 2.

In step 1, the teachers' perception of the principal's role clarification was entered. The R squared was increased to 0.417

and was significant at the 0.01 level. Individually, as presented in Table 3, none of the independent variables was significant at the 0.05 alpha level.

In step 2, the percent Native American was removed. The R squared decreased to 0.3490 and was significant at the 0.01 alpha level. The percent of free lunch was significant at the 0.01 alpha level and the teachers' perception of the principal's role clarification was significant at the 0.05 level.

In step 3, the variable of the teachers' perception of the principal's transformational leadership was entered. The R squared was the highest achieved at 0.5054 and was significant at the 0.002 alpha level. All three variables remained significant. The percent free lunch had a beta value of -0.4887 and was significant at the 0.001. The teachers' perception of the principal's role clarification had a beta value of -8.8913 and was significant at the 0.003 level. The teachers' perception of the principal's transformation leadership had partial regression coefficient of 10.5460 and was significant at the 0.02 level.

TABLE 2

Stepwise Regression Model of Step 0: Percent Student Free Lunch and Percent Student Native American

(n = 24)

Independent Variables Singly	Beta Value	F	Prob>F
Percent Student Free Lunch	-0.2409	2.74	0.1127
Percent Student Native American	-0.4350	3.16	0.0900
Above	R2		
Independent Variables in Combination	0.3181	4.90	0.0180

TABLE 3

Stepwise Regression Model of Step 1: Teachers' Perception of Role Clarification, Percent Student Free Lunch, and Percent Student Native American

(n = 24)

Independent Variables Singly	Beta Value	F	Prob>F
Percent Student Free Lunch	-0.2529	3.36	0.0819
Percent Student Native American	-0.3597	2.34	0.1421
Teachers' Perception of Role Clarification	-4.3871	3.40	0.0802
Above	**R2**		
Independent Variables in Combination	0.4171	4.77	0.0115

Research Hypotheses Finding

Category One: Null Hypotheses on the Teachers' Perceptions of Leadership Scales

Hypothesis 1. There is no relationship between principal leadership style, as perceived by the teachers on the decision participation scale, and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status.

As the stepwise procedure failed to find a relationship at or lower than the alpha 0.05, the null hypothesis is accepted.

Hypothesis 2. There is no relationship between principal leadership style,as perceived by the teachers on the role clarification scale, and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status. As indicated on Tables 4 and 5 there is a significant negative relationship between the teachers' perception of the principal's role clarification and the students' CTBS scores. Table shows a beta value -5.0178 at the alpha level of 0.05 when controlling for the percent of students who were eligible for a free lunch. Table 5 shows a beta value of -8.8913 at the alpha level of 0.0032. While Table 3 shows a beta value of -4.3871 and a level of significance of 0.0802 which is higher than the predetermined 0.05, the level of significance for the model itself is 0.0115. Therefore, the null hypothesis is rejected and the alternative hypothesis is acceptted: There is a significant association between the teachers' perception of role clarification and the students CTBS scores when controlling for the percent of students who were eligible for Chapter I funds or for student ethnicity.

TABLE 4

Stepwise Regression Model of Step 2: Teachers' Perception of Role Clarification and Percent Student Free Lunch

(n = 24)

Independent Variables Singly	Beta Value	F	Prob>F
Percent Student Free Lunch	-0.3772	6.68	0.017
Teachers' Perception of Role Clarification	-5.0178	4.31	0.050
Above	R2		
Independent Variables in Combination	0.3490	5.63	0.011

TABLE 5

Stepwise Regression Model of Step 3: Percent Student Free Lunch, Teachers' Role Clarification, and Teachers' Transformation Leadership
(n = 24)

Independent Variable Singly	Beta Value	F	Prob>F
Percent Student Free Lunch	-0.4887	13.88	0.0013
Teachers' Perception of Role Clarification	-8.8913	11.24	0.0032
Teachers' Perception of Transformation Leadership	10.5460	6.33	0.0206
Above	**R2**		
Independent Variables in Combination	0.5054	6.81	0.0024

Hypothesis 3. There is no relationship between principal leadership style, as perceived by the teachers on the supervision scale, and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status. As the stepwise procedure failed to find a relationship at or lower than the alpha 0.05 level, the null hypothesis is accepted.

Hypothesis 4. There is no relationship between principal leadership style, as perceived by the teachers on the peer cooperation scale and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status. As the stepwise procedure failed to find a relationship at or lower than the alpha 0.05 level, the null hypothsis is accepted.

Hypothesis 5. There is no relationship between principal leadership style, as perceived by the teachers on the transformation scale and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status. As indicated on Table 5, there is a positive relationship between the teachers' perception of the principal's transformation leadership and students' CTBS scores when controlling for the percent of students eligible for a free lunch. Table 5 shows a beta value 10.5460 at the alpha level of 0.02. Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted: There is a significant association between the teachers' perception of transformation leadership and the

students' CTBS scores. However, transformation leadership was not found to be significantly related to students' CTBS scores when controlling for the percent of students eligible for Chapter I funds or for student ethnicity.

Category Two: Null Hypothesis on the Principals' Self-Ratings on Leadership Scales.

Hypothesis 6. There is no relationship between principal leadership style, as self-rated by the principals on the decision participation scale, and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status. As the stepwise procedure failed to find a relationship at or lower than the alpha 0.05 level, the null hypothesis is accepted.

Hypothesis 7. There is no relationship between principal leadership style, as self-rated by the principals on the role clarification scale, and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status. As the stepwise procedure failed to find a relationship at or lower than the alpha 0.05 level, the null hypothesis is accepted.

Hypothsis 8. There is no relationship between principal leadership style, as self-rated by the principals on the supervision scale, and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status. As the stepwise procedure failed to find a relationship at or lower than the alpha 0.05 level, the null hypothesis is accepted.

Hypothesis 9. There is no relationship between principal leadership style, as self-rated by the principals on the transformation scale, and student CTBS scores at or less than the alpha 0.05 level when controlling for student ethnicity and socioeconomic status. As the stepwise procedure failed to find a relationship at or lower than the alpha 0.05 level, the null hypothesis is accepted.

Summary of Findings

1. Of the four school characteristics, only the percent of students eligible for a free lunch was significantly related as a single variable at or below the 0.05 level to student CTBS scores. The percent of students who were Native American was significantly related at or below the 0.05 level as part of a model but not as a single item. However, the percent of students that are Native American as a single variable in that model, was not found to be significantly related to student CTBS scores. The percent of students who were Hispanic and the percent who were eligilbe for Chapter I funds were not found to be significantly related to the student CTBS scores either individually or as part of a model.

2. Of the five teachers' perceptions of the principals' leadership style only two were significantly related to student CTBS scores. The teachers' perception of role clarification was negatively related and their perception of transformation leadership was positively related. The teachers' perceptions on the decision participation, the supervision, and the peer

cooperation scales were not found to be significantly related.

3. Of the principals' four self-ratings, none were found to be significantly related. These included the decision participation, role clarification, supervision, and transformation scales.

Conclusions

1. Regarding socioeconomic status, the findings were similar to other studies, especially Vaughn, 1984, and Martellaro, 1984. Socioeconomic status is related to student scores. However, the percent of students who are eligible for a free lunch may be better as a socioeconomic status measure than the percent eligilbe for Chapter I funds, at least for students in small schools. This may be due to the fact that the percent eligible for a free lunch, 51.6, is larger than the percent eligible for Chapter I, 14.5 (Table 1).

2. Regarding Hispanic ethnicity the observation was that in small schools, Hispanic status does not contribute to low scores. While this study does not provide the bases for any specific explanation, perhaps small school rural Hispanic eighth graders feel more secure in their settled communities, where they do not feel that they are outsiders who are in competition with others, needing to prove their worth to themselves and others.

3. Regarding Native American ethnicity, the findings are not as clear. While Native American status was included in steps 0, 1, and 6 which were significant as models, Native American

status did not once achieve a level of significance as a single variable. This inconclusiveness may be due to the fact that this sample contained a small number of schools, six, that had Native American students and only one district had a notable proportion, 43.6 percent.

4. Role clarification was negatively related to student scores. The eighth grade teachers from the most effective schools do not want to receive detailed instruction from their principal on how they should teach. In the most effective shcools, principals apparently do not give detailed instructions. While the principal must have some role as a facilitator of learning, it appears that spelling out in detail what teachers should do is not one of the ideal roles of a principal. Perhaps it lowers the teachers' sense of professionalism.

5. Transformation or charismatic leadership is the sole principal leadership style that was found to be positively significant. Motivating eighth grade teachers is a form of leadership that apparently is acceptable to teachers, and perhaps even desired by them, as well as an effective way to raise student scores. Teachers from schools with high student CTBS scores perceived themselves as highly inspired by their principal.

6. Teachers' perceptions were found to be significantly related to student scores in two areas, whereas not one of the principals' perceptions was significant. How and why teachers see things is definitely something that people who are

interested in increasing school effectiveness need to study. Principal leadership style, not as self-rated by the principal, but as perceived by the eighth grade teachers, is related to student learning. When the principal clarifies the role of the teacher, it may be expected that student achievement will be lowered, but when the principal inspires and motivates the teachers, it may be expected that student grades will improve.

REFERENCES

Achen, Christopher H. (1982) Interpreting and Using Regression. Beverly Hills: Sage Publications.

Andrews, Richard L., & Soder, Roger (1987). "Principal Leadership and Student Achievement," Educational Leadership, pp. 9-11.

Bass, Bernard M. (1985). Leadership and Performance Beyond Expectations. New York: The Free Press.

Comprehensive Tests of Basic Skills Form S All Levels Expanded Edition, Technical Bulletin, No. 1. (1976) Monterey, California: CTB/McGraw Hill.

"Culture of an Effective School." Research Action Brief No. 22. (1984) Eugene, Oregon: ERIC Clearinghouse on Educational Management.

Edmonds, Ronald R. (1982b). "On School Improvement: A Conversation with Ronald Edmonds," Educational Leadership. 40. (3), 13-15.

Howell, Jon P. & Dorfman, Peter W. (1981) "Substitutes for Leadership: Test of a Construct," Academy of Management Journal, 24, 725-728.

Howell, Jon P. & Dorfman, Peter W. (1986) "Leadership and Substitutes for Leadership Among Professional And Nonprofessional Workers," The Journal of Applied Behavior Science, 22, 21-46.

Kimball, George, Crawford, John, & Watson, Pat. (1985) "Relations of Whithin-School Cohesiveness and Principal Ratings With Achievement." (ERIC Document No. 267 477).

Larsen, Terry J. (1987) "Indentification of Instructional Leadership Behaviors and th Impact of Their Implementation on Academic Achievement," Paper presented at the American Educational Research association, (ERIC Document No. ED 281 286)

Lightfoot, Sara L. (1983) The Good High School: of Character & Culture. New York: Basic Books.

Martellaro, Helena Christina Aronson. (1984) The Relationship of School Enrollment Size to Academic Achievement in New Mexico. Unpublished doctoral dissertation, New Mexico State University, Las Cruces, New Mexico.

Purkey, Stewart, Smith, Marshall S. (1982) "Too Soon to Cheer? Synthesis of Research on Effective Schools," Educational Leadership, 40, (3), 64-69.

Schriesheim, C.A., & Bird, B.J. (1979) "Contributions of the Ohio State Studies to the Field of Leadership." Journal of Management, 5, 135-145.

Stanard, Marilynn. (1986) "Rural Principal: A Case Study of an Effective Disceplinarian." Rural Educator, 1, 16-21

Taylor, James C., & Bowers, David G. (1972) Survey of Organizations: A Machine-Scored Standardized Questionaire Instrument. Ann Arbor, Michigan: Institute for Social Research, The University of Michigan.

Vaughn, Rosco C. (1984) The Relationship of School Enrollment Size and Student Achievement in Reading, Language, and Mathematics in New Mexico Public Schools. Unpublished doctoral dissertation, New Mexico State University, Las Cruces, New Mexico.

Yukl, Gary A., & Nemeroff, Wayne F. (1979) "Identification and Measurement of Specific Categories of Leadership Behavior: A Progress Report", in Hunt, James G. & Larson, Lars L., (Ed.). Crosscurrents in Leadership. Carbondale: Southern Illinois University Press.